EXPLANATION OF ERROR CODES

ERROR CODE 1 POWER INTERRUPTED

Power interruption to control PC board:

- Check if overheat thermostat activated during sterilizing cycle due to pressure leak (Refer to chart 1).
- Check if overheat thermostat activated because water level sensor shorted, bypass ing filling phase.
- Check if overheat thermostat activated during dry cycle due to high input voltage to unit (Refer to chart 4) or pressure leak during sterilization (Refer to chart 1).
- Check for poor electrical connection in sterilizer or facility wiring.
- Check for faulty overheat thermostat that trip early.
- Check water level in chamber.

ERROR CODE 2 STOP BUTTON DEPRESSED

Stop button pressed during sterilizer cycle.

ERROR CODE 3 ON/STANDBY BUTTON DEPRESSED

On / Standby button pressed during sterilizer cycle.

ERROR CODE 4 DOOR AJAR DURING CYCLE

Door ajar during sterilizer cycle:

- Check if door latch is engaging switch.
- Check door switch or wiring connection.

ERROR CODE 5 EXCESSIVE PRESSURE

Display pressure exceeded 35 psi:

- Check if sterilizer is overloaded.
- Check if bellows is closing early trapping air in the chamber.
- Check if unit calibration or temperature probe is malfunctioning or dirty (Refer to Calibration Procedure).
- Check for moisture around pressure sensor hose on the Main PC board.

ERROR CODE 6 EXCESSIVE TEMPERATURE

Display temperature exceeded 277 degrees:

- Check for slow pressure leak (Ref. to chart 1).
- Check if unit calibration or temperature probe is malfunctioning or dirty (Refer to Calibration Procedure).

ERROR CODE 7 PRESSURE LOW DURING CYCLE

Display pressure dropped below 24.5 psi:

- Check for slow pressure leak (Ref. to chart 1).

ERROR CODE 7 (cont'd.)

- Check if unit calibration or temperature probe is malfunctioning or dirty (Refer to Calibration Procedure).

ERROR CODE 8 DOOR MALFUNCTION

Door switch did not change status after door solenoid actuated.

If door opened at end of cycle:

- Check door switch or wiring connection.

If door did not open at end of cycle:

- Check for smooth operation of latch lever and door solenoid plunger (Refer to Door Opening Test Procedure.)
- Check for burrs on door pins and latch bracket in door. Clean and lube with a lithium based grease.
- Check zero (0) pressure calibration.
- Check for dedicated power to the unit.

ERROR CODE 9 DOOR MALFUNCTION

Display pressure exceeded .9 psi during dry cycle.

If door opened at end of cycle:

- Check 0 pressure calibration.

If door did not open at end of cycle:

- Check for smooth operation of latch lever and door solenoid plunger. (Refer to Door Opening Test Procedure.)
- Check for burrs on door pins and latch bracket in door. Clean and lube with a lithium based grease.
- Check 0 pressure calibration.

ERROR CODE 10 HARDWARE / SOFTWARE

Watchdog timer reset error:

- Check for poor wiring connection in sterilizer or facility. Run additional cycle. If problem persists, change Main PC board.

ERROR CODE 11 HARDWARE / SOFTWARE

Software interruption error:

- Run additional cycle. If problem persists, change Main PC board.

ERROR CODE 12 HARDWARE / SOFTWARE

Ram test error:

- Run additional cycle. If problem persists, change Main PC board.

BLOWN FUSES

If fuse on Main PC blows:

- Check for internal shorts in the unit.

NO DISPLAY LIGHTS

IF UNIT DISPLAYS TEMPERATURE AND PRESSURE BUT WILL NOT SHOW LED STATUS LIGHTS:

- Disconnect power from unit for 30 seconds.

LOW WATER ERROR

Water did not complete the ground circuit within the (5) minute time limit.

If water is continuously filling:

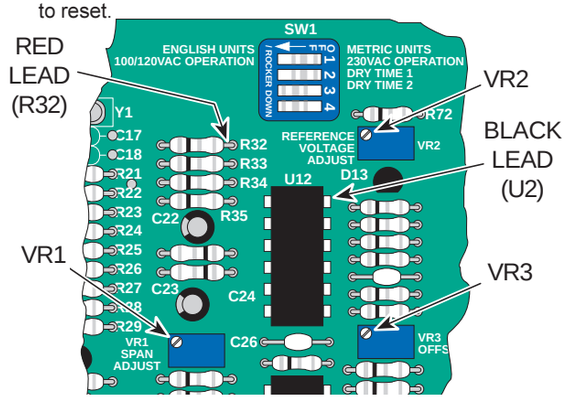
- Check for open sensor circuit or corrosion on sensor.
- Check temperature probe by disconnecting from Main PC board.

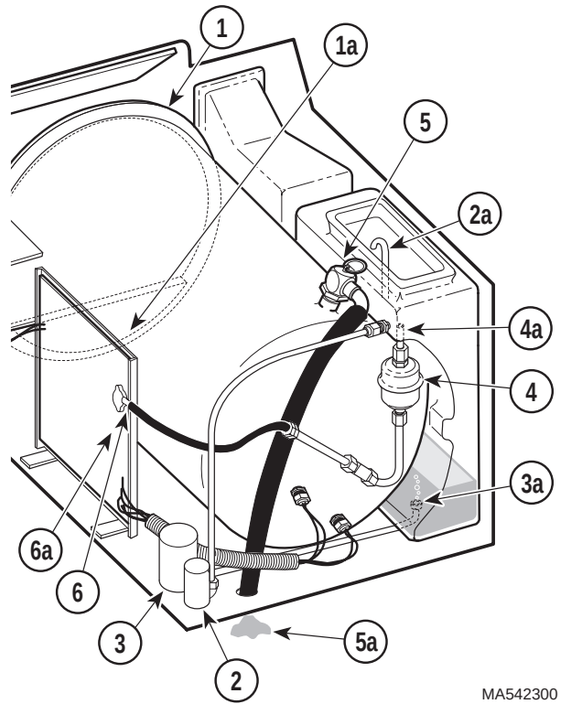
If water is not entering the chamber:

- Check for dirty filter.
- Check fill valve for debris.

M9 / M11 PRESSURE & TEMPERATURE CALIBRATION PROCEDURE

1) Open door.
2) Depress the **LIQUIDS & PACKS** button while plugging in the power cord
3) Depress and release all **7** buttons from left to right across display panel starting with **UNWRAP** button.
4) Adjust pressure pot **(VR3)** counter-clockwise to **0.0 PSI**, then turn clockwise until display pressure reads **0.1 PSI**.
5) Attach red lead of multimeter to right prong of **R32**.
6) Attach black lead to top right pin of **U12**.
7) Adjust temperature pot **(VR2)** to reference **2.55 VDC**.
8) Attach pressure gauge, close door and press **START**.
9) Check for pressure leaks after **212°F** (Refer to chart 1).
10) After display reaches **272°F**, adjust the pressure range pot **(VR1)** until display pressure matches pressure gauge.
11) Depress the **STOP** button to end test cycle.
12) After unit vents and door opens, unplug power cord to reset.





MA542300

CHART 1 - AREAS TO CHECK FOR PRESSURE LEAKS

1) Door Gasket:

1a) • Check for water leaking around the door.

2) Vent Solenoid Valve:

2a) • Check for water leaking in the reservoir through the condensing coil.

3) Fill Solenoid Valve:

3a) • Check for water leaking back into the reservoir through the fill line, raising the reservoir water level.

4) Bellows Valve:

4a) • Check for excessive steam from the bellows line in the reservoir. NOTE: A light hiss of steam is not uncommon.

5) Pressure Relief Valve:

5a) • Check for water leaking beneath the back of the sterilizer. NOTE: Check actual pressure in the sterilizer before replacing the pressure relief valve.

6) Pressure Sensor Hose:

6a) • Check for steam leak onto Main PC board.

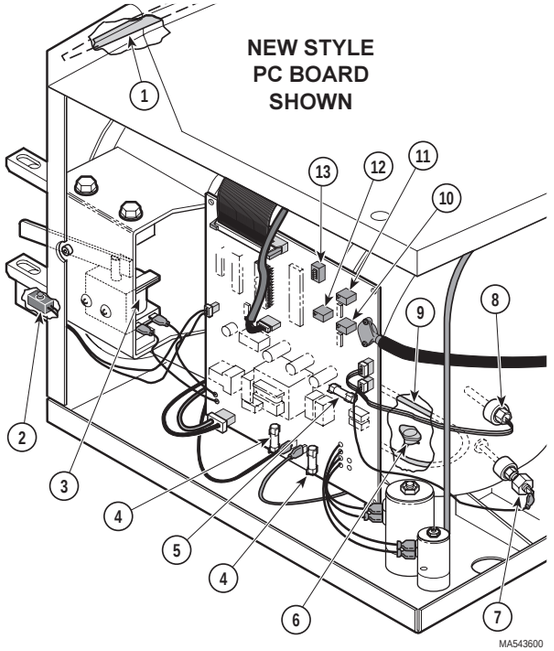


CHART 2 - ELECTRICAL COMPONENT LOCATION

1) Display PC Board
2) Door Switch
3) Pulse Solenoid
4) Line Fuses
5) Printer Fuse
6) Overheat Thermostat
7) Water Level Sensor
8) Temperature Sensor
9) Heating Element
10) Pressure Zero Potentiometer
11) Temperature Potentiometer
12) Pressure Range Potentiometer
13) Dry Cycle Dip Switch

CHART 3 - PRESSURE / TEMPERATURE

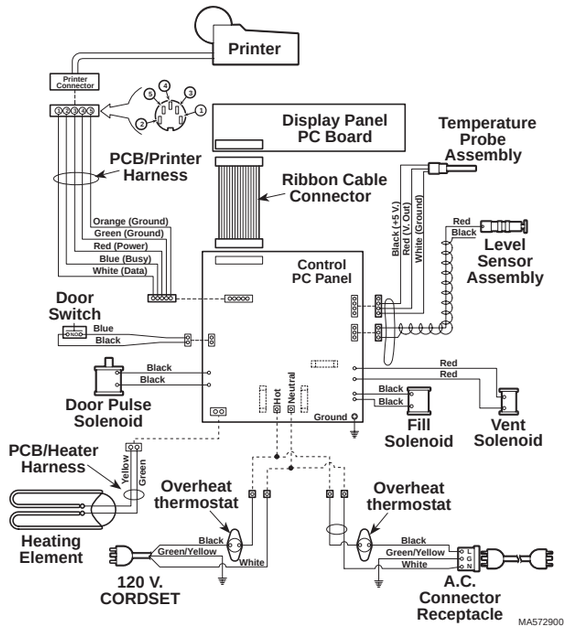
PSI	°C	°F	PSI	°C	°F
0	100.0	212.0	16	122.0	251.6
1	101.9	215.4	17	123.0	253.4
2	103.6	218.5	18	124.1	254.4
3	105.3	221.5	19	125.0	257.0
4	106.9	224.4	20	126.0	258.8
5	108.4	227.1	21	126.9	260.0
6	109.8	229.6	22	127.8	262.0
7	110.3	232.3	23	128.7	263.7
8	112.6	234.7	24	129.6	265.3
9	113.9	237.0	25	130.4	266.7
10	115.2	239.4	26	131.3	268.3
11	116.4	241.5	27	132.1	269.8
12	117.6	243.7	28	132.9	271.2
13	118.8	245.8	29	133.7	272.7
14	119.9	247.8	30	134.5	274.1
15	121.0	249.8	31	135.3	275.5

M9 / M11 DOOR OPENING TEST

NOTE: *This test will only verify that the door opening relay on the main PC is working. The complete cycle must be run to verify power operation of sensors and latching mechanism.*

1) Fill chamber with water (To do this, start any cycle. After chamber has filled with water, the sterilizing LED will illuminate.)
2) Disconnect power cord.
3) Open door.
4) Depress STOP and POUCHES button while reconnecting power cord.
5) Depress all buttons from left to right across the display panel.
6) Close the door. (This will, in sequence, activate all relays in the sterilizer).
7) To rerun procedure, repeat steps 2 through 6.

ELECTRICAL SCHEMATIC



SPECIFICATIONS

M9 Capacity:
Water Reservoir (Approx.) 7/8 gal. (3.31 Liters to full mark)
M11 Capacity:
Water Reservoir (Approx.) 1.25 gal. (4.73 Liters to full mark)
M9 & M11 Electrical Requirements:
115 VAC Unit ..... 110 - 120 VAC 50 - 60 HZ, 15 amp, single phase
230 VAC Unit ..... 220 - 240 VAC 50 - 60 HZ, 7 amp, single phase

SPECIFICATIONS (cont'd.)

Electrical Recommendations:
A separate (dedicated) circuit is recommended for this sterilizer. The sterilizer ***should not*** be connected to an electrical circuit with other appliances or equipment unless the circuit is rated for the additional load. May use 15 amp surge protector.

Cleaning Recommendations:
Weekly.....Drain water and refill with new distilled water.
Monthy.....Run Speed-Clean solution through sterilizer.

Power Consumption:
115 VAC Unit ..... 1425 WATTS, 12 amps @ 120 VAC
230 VAC Unit ..... 1500 WATTS, 7 amps @ 240 VAC

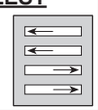
Chamber Pressure:
Operating 27 - 31 psi (186 - 215 kPa)
Minimum Before Door Is Released..... 0.7 psi (5 kPa)
Maximum Before Safety Valve Opens (older units)..... 35 psi (241 kPa)
Maximum Before Safety Valve Opens (newer units)..... 40 psi (275.7 kPa)

Chamber Temperature (Operating):
Unwrapped Cycle ..... 272-273 °F (133-134 °C)
Pouches Cycle ..... 272-273 °F (133-134 °C)
Liquids Cycle ..... 252-253 °F (122-123 °C)
Packs Cycle..... 252-253 °F (122-123 °C)
Max. Before Thermostat Energizes..... 295 °F (146 °C)

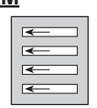
CHART 4 - M9 / M11 DRY CYCLE DIP SWITCH CONFIGURATIONS

NOTE: *Unplug the unit prior to repositioning switches. Arrow denotes side of switch to depress.*

Setting 1 COOLEST
#3 to right (ON)
#4 to right (ON)

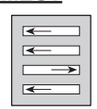


Setting 3 WARM
#3 to left (OFF)
#4 to left (OFF)

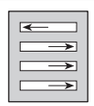


Setting 2 COOL
#3 to left (OFF)
#4 to right (ON)

Setting 4 WARMEST
#3 to right (ON)
#4 to left (OFF)



NOTE: If the unit continues to overheat in the lowest standard setting **(Setting 1)**, the #2 switch can be moved to the right (ON) position to make the dry cycle even cooler.



MIDMARK®

M9 & M11 STERILIZER QUICK REFERENCE SHEET

When calling for service please have the following information available:

- Model Number
- Serial Number
- Description of problem

PHONE NUMBER.....1-800-MIDMARK (643-6275)
- **PARTS ORDERING {ext. 8911}**
- **MEDICAL TECH SERVICE {ext. 8912}**
- **DENTAL TECH SERVICE {ext. 8913}**
- **STERILIZER TECH SER. {ext. 8925}**

SERVICE DEPT. FAX NUMBER.....1-877-249-1793

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